

**CLAIMS**

1. A continuous water treatment system comprising at least two stationary cylindrical vessels, wherein each vessel contains an ion exchange resin, and each vessel has at each end a flat head and a fractal liquid distributor.

5 2. The water treatment system of claim 1 in which the ion exchange resin consists of beads having a harmonic mean size from 400 microns to 700 microns, and having at least 95% of beads no more than 50 microns from the harmonic mean size.

3. The water treatment system of claim 2 in which water is treated at a flow rate per vessel of from 10 m<sup>3</sup>/hour to 60 m<sup>3</sup>/hour.

10 4. The water treatment system of claim 3 having three or four vessels, each of which contains anion exchange resin.

5. The water treatment system of claim 4 in which water is treated at a flow rate per vessel of from 40 m<sup>3</sup>/hour to 60 m<sup>3</sup>/hour.

15 6. The water treatment system of claim 5 constructed on a support frame, and measuring no more than 2.30 m wide by 2.37 m high by 6.08 m long.

7. The water treatment system of claim 6 in which an inside diameter of each vessel is from 1.1 m to 1.25 m.

8. The water treatment system of claim 7 in which a height of each vessel is from 1.2 m to 1.3 m.

20 9. The water treatment system of claim 8 in which the anion exchange resin is a strong base anion exchange resin.

10. The water treatment system of claim 9 in which the strong base ion exchange resin is a macroreticular ion exchange resin capable of removing nitrate, and having at least 98%, preferably at least 99%, of its particles in a size range from 400 microns to 1000 microns.